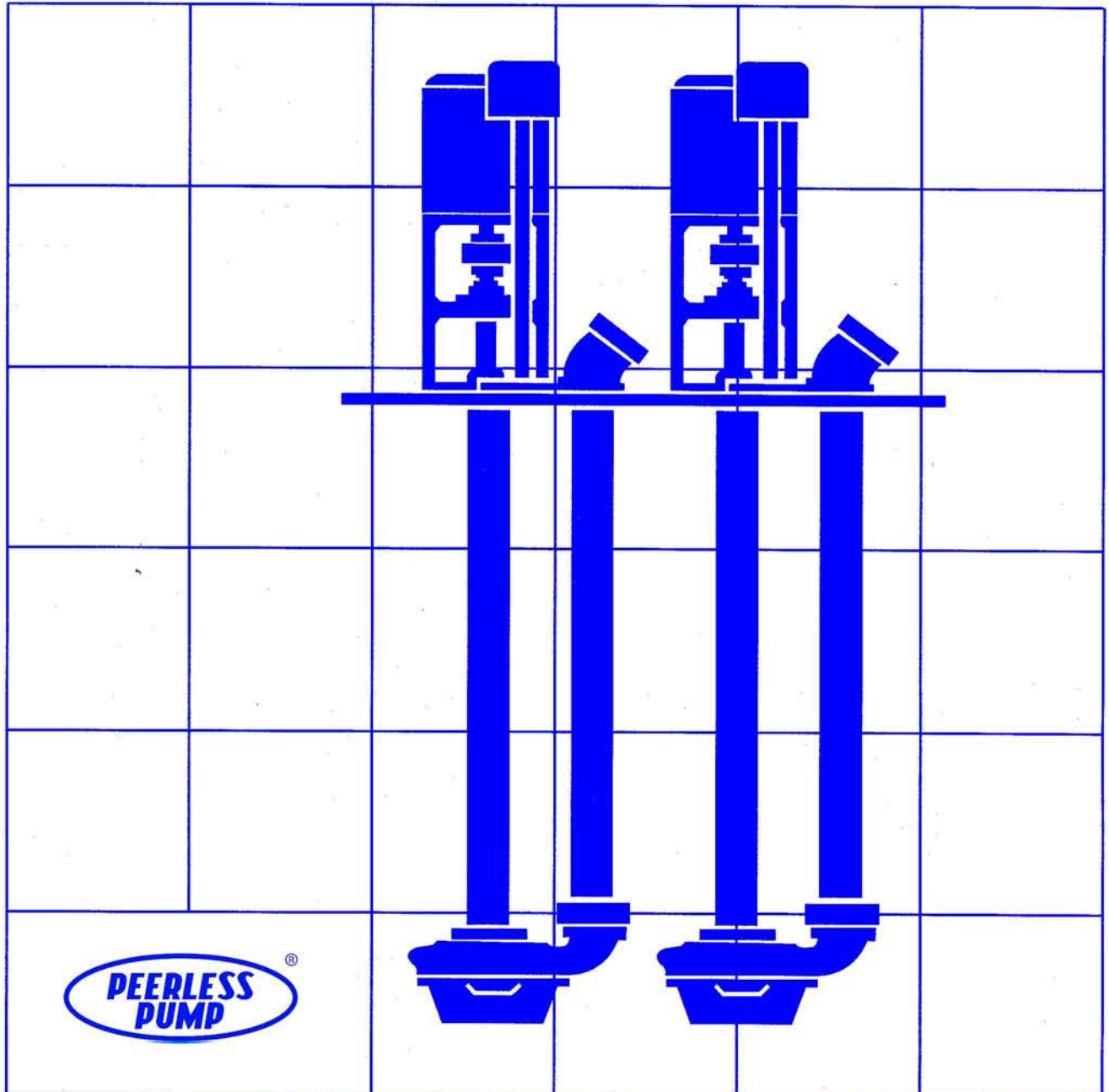


# Peerless Pump Company

## AUTOMATIC ELECTRIC SUMP PUMPS



## TYPICAL SPECIFICATIONS

LGL2—Furnish as shown on plans  single/duplex  Peerless Pump model LGL2 automatic sump pump, each rated to deliver \_\_\_\_\_ GPM when pumping against \_\_\_\_\_ feet total head at \_\_\_\_\_ RPM.

Pump shall be complete with grease lubricated radial ball thrust bearing in protected housing; cast iron casing; strainer; bronze semi-open impeller in natural hydraulic balance; steel hanger pipe; 2" standard threaded discharge pipe extending above floor level; steel shaft turned and ground its entire length with intermediate and casing bearings of bronze oilless type; all suspended from a cast iron 20" diameter floor plate.

### Pumping Unit

Pump to be directly connected by means of flexible coupling to a \_\_\_\_\_ HP, \_\_\_\_\_ Phase, \_\_\_\_\_ Hertz, \_\_\_\_\_ Volt, \_\_\_\_\_ RPM  open drip proof  totally enclosed  explosion proof, Class 1, Group D electric motor.

Pump shall be designed for a sump depth of \_\_\_\_\_ feet.

LB2A—Furnish as shown on plans  single/duplex  Peerless Pump model LB2A automatic sump pump, each rated to deliver \_\_\_\_\_ GPM when pumping against \_\_\_\_\_ feet total head at \_\_\_\_\_ RPM.

Pump shall be complete with grease lubricated radial ball thrust bearing in a cast iron dust proof housing located well above the floor level; cast iron casing; strainer; bronze enclosed impeller in natural hydraulic balance; enclosed steel hanger pipe; 2" standard discharge pipe with expansion joints and terminating above the floor plate in a 2" 45° elbow; steel shaft turned and ground its entire length with bronze oilless intermediate and casing sleeve bearings; all suspended from a cast iron 20" diameter floor plate.

Pump to be directly connected by means of flexible coupling to a \_\_\_\_\_ HP, \_\_\_\_\_ Phase, \_\_\_\_\_ Hertz, \_\_\_\_\_ Volt, \_\_\_\_\_ RPM  open drip proof  totally enclosed  explosion proof, Class 1, Group D electric motor.

Pump shall be designed for a sump depth of \_\_\_\_\_ feet.

LH2A, LB3A & LB4A—Furnish as shown on plans  single/duplex  Peerless Pump model (LH2A)(LB3A)(LB4A) automatic sump pump, each rated to deliver \_\_\_\_\_ GPM when pumping against \_\_\_\_\_ feet total head at \_\_\_\_\_ RPM.

Pump shall be complete with grease lubricated radial ball thrust bearing in a cast iron, dust proof housing located 8 inches minimum above floor level; cast iron casing; strainer; bronze enclosed impeller in natural hydraulic balance; enclosed steel hanger pipe; discharge pipe; (2") (3") (4") 45° elbows; steel shaft turned and ground its entire length with bronze grease lubricated intermediate and casing sleeve bearings; all suspended from a cast iron 20" diameter floor plate. Intermediate bearings shall be positioned in bearing plates between two hanger pipe flanges with tongue and groove construction.

Pump to be directly connected by means of flexible coupling to a \_\_\_\_\_ HP, \_\_\_\_\_ Phase, \_\_\_\_\_ Hertz, \_\_\_\_\_ Volt, \_\_\_\_\_ RPM  open drip proof  totally enclosed  explosion proof, Class 1, Group D electric motor.

Pump shall be designed for sump depth of \_\_\_\_\_ feet.

### Controls

FLOAT SWITCH—Pumps shall be automatically controlled by an  NEMA 1  NEMA 4  NEMA 7 enclosed, float operated switch having a copper or copper plated steel float and substantial float rod (available for all models).

SEALTRODE® FLOATLESS CONTROLLER—For automatic control of pumps, furnish one sealed electrode floatless pump controller Model \_\_\_\_\_.

ALTERNATOR—Duplex units shall be furnished with a float activated mechanical switch to alternate the pumps automatically on each successive operation cycle and also to switch on both pumps if one pump cannot handle the load. Optional: The alternator switch shall be equipped with high water alarm contacts to activate remote (by Others) alarm bell(s) and/or light(s). (Available in NEMA 1 enclosure only).

HIGH WATER ALARM—Furnish a pressure type high water alarm of the contact, bearing diaphragm spring tension type, a length of pressure pipe supported by a base and an electric bell with transformer for \_\_\_\_\_ Volts. High water alarm switch shall be in  NEMA 1  NEMA 4  NEMA 7 enclosure.

### Basin and Cover

Furnish  cast iron/steel  basin \_\_\_\_\_ inches in diameter and three feet deeper than the lowest inlet entering basin. Inlet shall be \_\_\_\_\_ inches in diameter with its center line \_\_\_\_\_ inches down from top of basin. A  cast iron/steel  cover \_\_\_\_\_ inches in diameter to accommodate \_\_\_\_\_ pumps, control equipment and provide a suitable manhole.

## Optional Equipment Sealtrode®

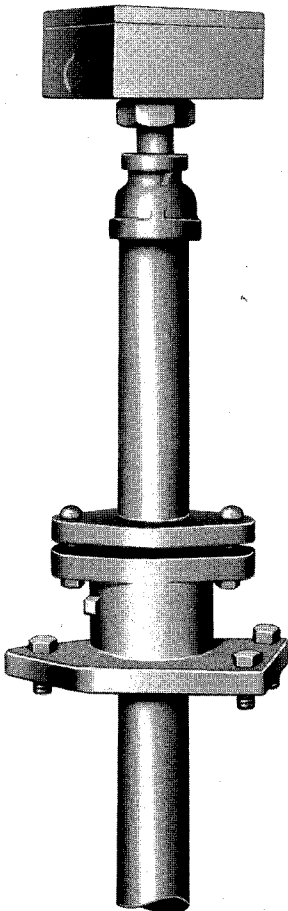
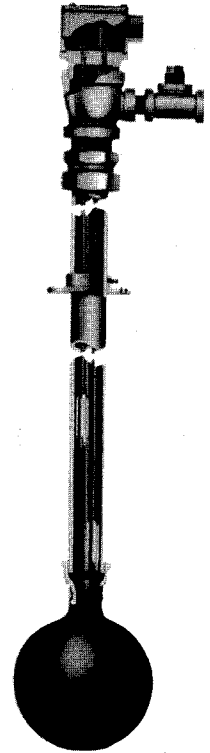
### The Peerless Pump Series P Sealed Electrode Floatless Pump Controller

The Sealtrode Sealed Electrode Floatless Pump Controller is a device for controlling the operation of one or more pumps. The electrodes are completely sealed, never encountering sludge, oil, soap, grease, paper, twigs, rags or corrosive material. The electrodes never become fouled. As the liquid level rises in the wet well it exerts a hydrostatic pressure on a flexible bulb filled with an electrolytic solution. This pressure squeezes the bulb, causing the displaced electrolytic solution to rise in the support pipe. As the liquid within the support pipe rises and falls, electrodes make and break electrical circuits, activating the pump starters.

Many various Sealtrode models are available which include standard and optional features such as . . .

- Electrodes for turning one or two pumps on and off.
- Manual switch for pump lead lag priority.
- Automatic motor-driven alternator which reverses pump lead/lag priority after each operation cycle. Keeps pumps "exercised" and equalizes wear.
- Contacts for high water alarms.
- Control panels with various standard and optional features, as described below.

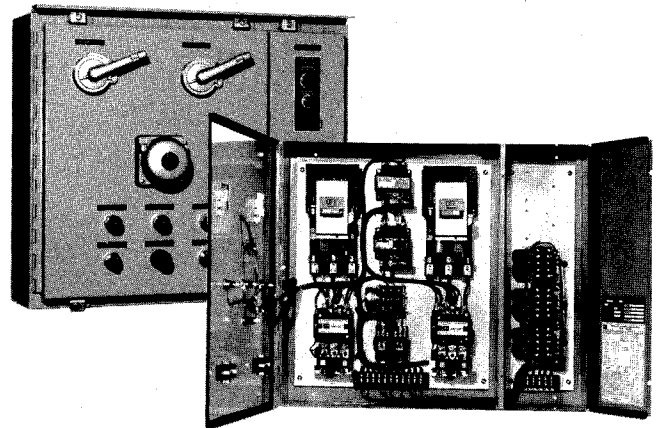
For additional Sealtrode Controller information, refer to brochure B-6610.



#### High Water Alarm

The high water alarm is activated by a pressure switch which is actuated by the compression of air in a pressure pipe when high water occurs. The liquid level at which the alarm is activated may be pre-selected from the range of settings available on each control unit. When the alarm is activated at this high water setting, it indicates either sump inflow rates in excess of the pumps' capacities or a malfunction of one or both pumps.

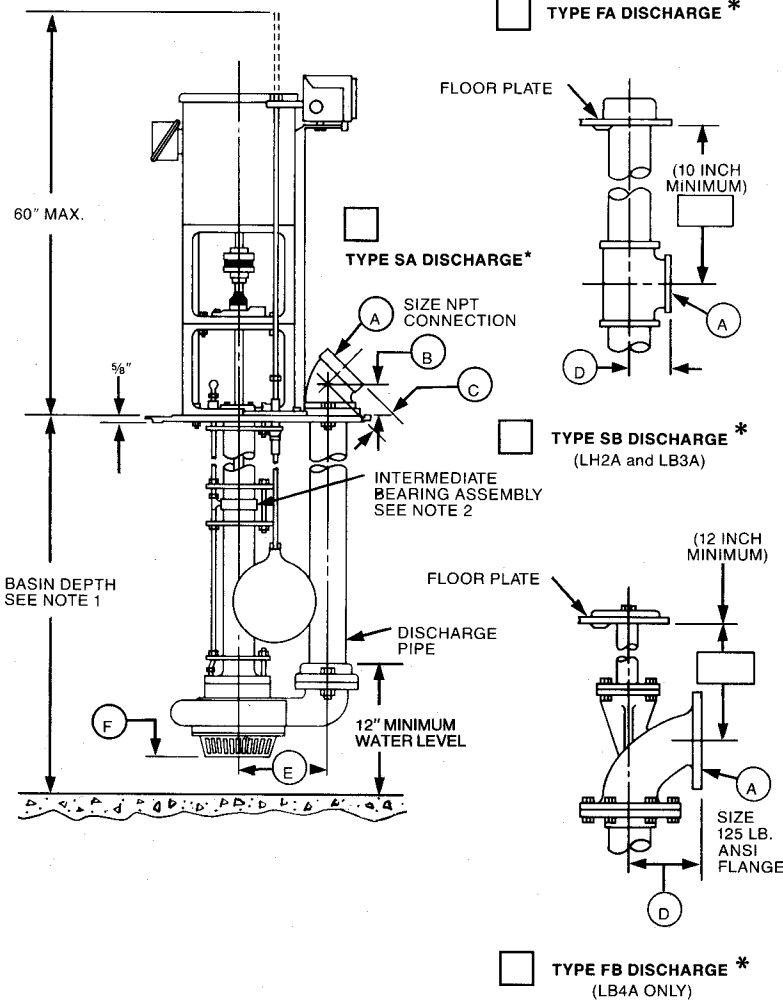
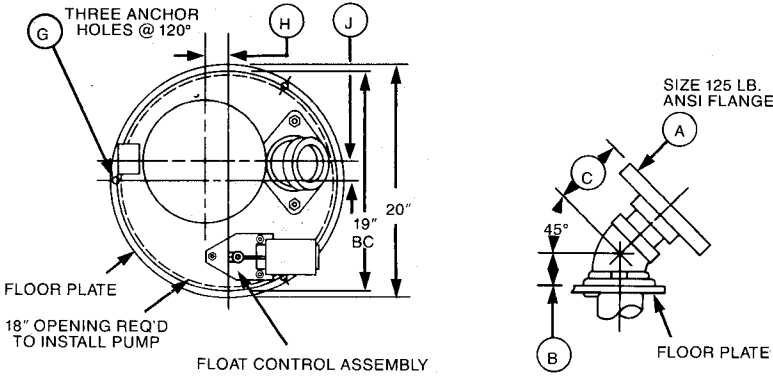
#### Sealtrode Control Panels



For installations where control panels are desired, panels are available with the equipment listed below. In addition, optional features such as hand OFF-AUTO selector switches, three leg overload protection, floor mounting stand and NEMA-1 or NEMA-7 enclosures with intrinsically safe switches are also available.

- Magnetic Starters
- Fused Disconnect Switches
- Electric Alternator
- Green Pump Running Lights
- Red Light (Visible Alarm)
- 4" Bell (Audible Alarm)
- Bell Silencing Button

# Dimensions LH2A, LB3A, LB4A



All dimensions are in inches not certified.  
 Certified dimension prints furnished on request.

## Basin Depths

To prevent frequent pump cycling, the draw down capacity of the sump should be at least 250% of the maximum inflow capacity. Thus, if the maximum inflow is 60 gpm, the sump's capacity between the lowest inlet and the minimum water level should be at least 150 gallons. Assuming a minimum height of 4 feet from the lowest inlet to the minimum water level, the recommended sump diameter, or the side width of a square sump, is:

### Sump Diameter or Side Width

Max. Inflow Rate gpm	Pump Capacity, gpm	Single Pump	Duplex Unit
20	25	24"	36"
40	50	24"	36"
60	75	30"	36"
80	100	36"	42"
120	150	42"	48"
160	200	48"	60"
200	250	60"	60"
240	300	60"	72"
325	400	72"	84"

\*Minimum diameter 30" for LH2A, LB3A & LB4A

## Basins and Covers

For proper mating of the basin and cover with the sump pump suitable for your requirements, we recommend that you consult with your Peerless Pump representative. Peerless Pump offers an extensive line of basins and covers designed to accommodate Peerless Pump sump pumps and their accessories. Drawings describing basins, covers and their dimensions, port locations, etc. can be furnished to meet your needs.

### NOTE 1

Standard lengths are for basin depths of 3'0" thru 15'0" in 6" increments.

### NOTE 2

Number of intermediate bearing assemblies:

4' Maximum Brg. Intervals	Number of Bearings
3'0" thru 4'6"	1
5'0" thru 8'6"	2
9'0" thru 12'6"	3
13'0" thru 15'0"	4

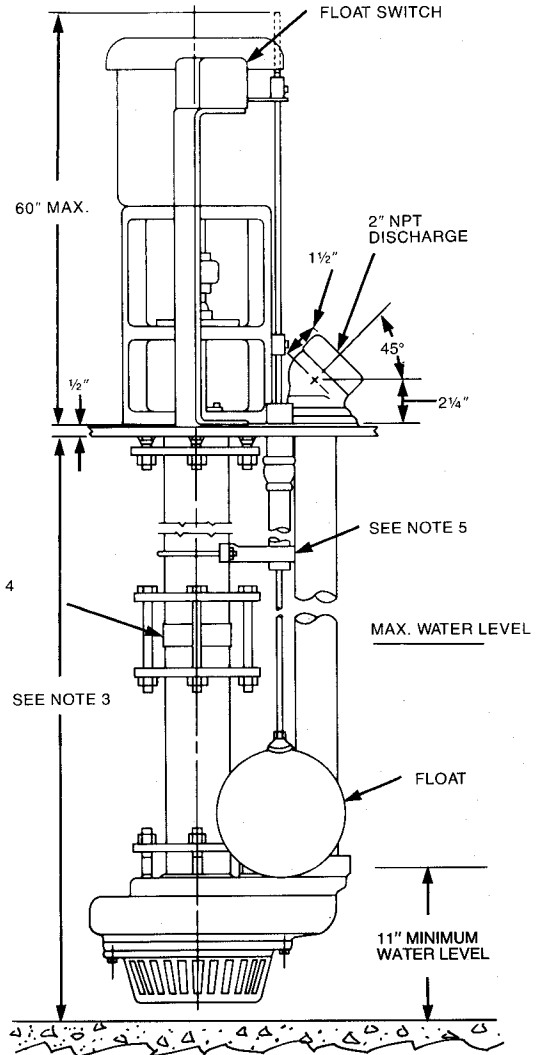
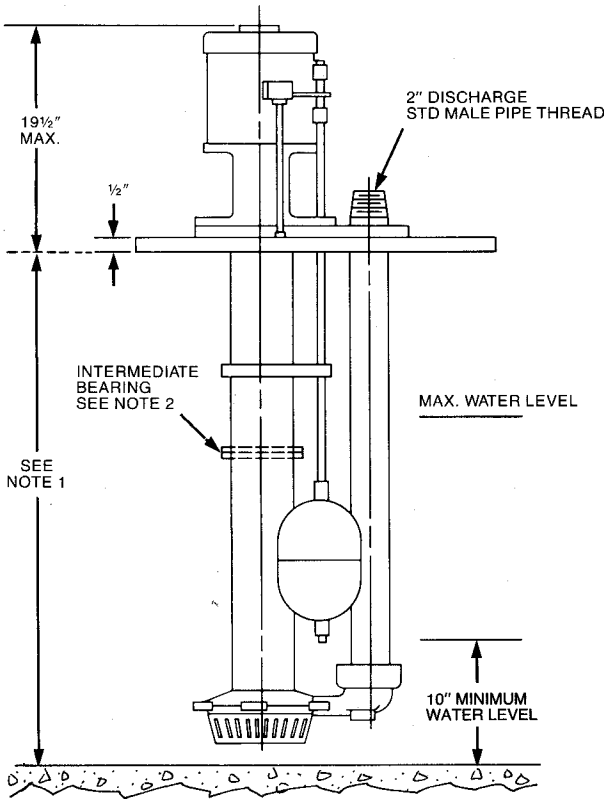
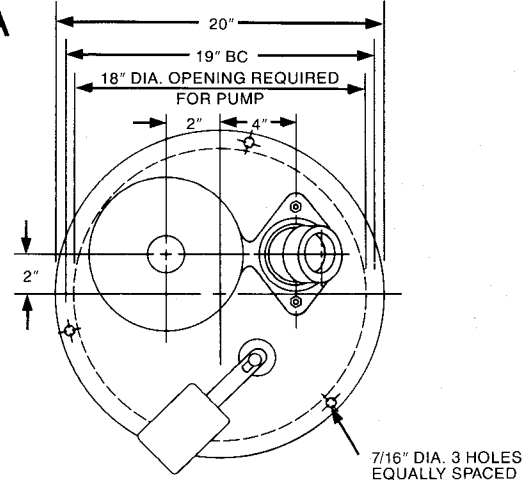
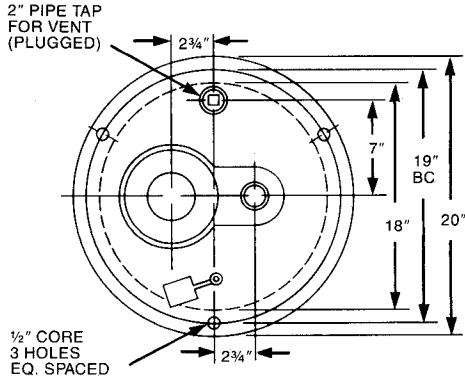
Pumps with optional construction are available for basin depths to 30 feet. Consult your Peerless Pump representative.

TABLE OF DIMENSIONS											
PUMP FRAME	DISCH. TYPE	A	B	C	D	E	F	G	H	J	
LH2A	SA	2	2-1/4	1-1/2	—	7-11/16	3-1/4	7/16	2	2	
	FA			3-3/8							
	SB			2-1/4							
LB3A	SA	3	2-7/8	2-3/8	—	8-3/8	3-1/8	1/2	2-1/4	0	
	FA			4-1/2							
	SB			3-1/8							
LB4A	SA	4	2-7/8	2-9/16	—	—	—	—	—	—	
	FA			4-1/2							
	FB			6-1/2							

# Dimensions

## LGL2

## LB2A



**NOTE 1**  
Standard lengths are for basin depths of 2'0" thru 9'0" in increments of 6". Pump length below floor plate is less than basin depth as follows:

2 1/2" for 2'0" depth	4 1/4" for 3'6" depth
3 3/4" for 2'6" depth	4 1/2" for depths 4'0" thru 9'0"
2 1/2" for 3'0" depth	

**NOTE 2**  
Number of intermediate bearing assemblies:

Length	Number of Bearings
2'0" thru 3'0"	None
3'6" thru 6'0"	1
6'6" thru 8'6"	2
9'0"	3

All dimensions are in inches not certified. Certified dimension prints furnished on request.

**NOTE 3**  
Standard lengths are for basin depths of 3'6" thru 9'0" in increments of 6". Pump length below floor plate is 3 3/4" less than basin depth.

**NOTE 4**  
Number of intermediate bearing assemblies:

Length	Number of Bearings
3'0" thru 4'0"	None
4'6" thru 8'6"	1
9'0"	2

**NOTE 5**  
Support bracket furnished for pumps for basins 8'0" and deeper.

## Pump Selection

### Selecting Pump Capacity

The rated capacity of a sump pump handling drainage from tile at footings is dependent upon a number of factors including nature of soil, frequency and extent of rainfall, depth of tile below surface, area drained, proximity to rivers or streams, etc. From many years' experience covering thousands of installations, we recommend estimating an inflow of 2 gpm per 100 sq. ft. of area drained for sandy soils, or 1 gpm for clay soils.

When the pump is to handle run-off from roofs or paved areas such as parking lots, the pump capacity should be based on the maximum rainfall ever recorded over a 15 minute period. This information is obtainable from the local Weather Bureau.

One inch of rain falling on 100 sq. ft. will give a run-off of 62 gallons. Assuming that we have an area 200' x 46' and the maximum rainfall recorded in a 15 minute period is one-half inch, we calculate:

$$200' \times 46' = 9,200 \text{ sq. ft.}$$

$$\frac{1}{2}'' \text{ rainfall on } 100 \text{ sq. ft.} = 31 \text{ gallons run-off}$$

$$92 \times 31 = 2,852 \text{ gallons in 15 minutes}$$

$$2,852 \text{ divided by } 15 = 190 \text{ gpm inflow}$$

$$\text{Pump capacity} = 1.25 \times \text{maximum inflow}$$

$$190 \times 1.25 = 238 \text{ gpm pump capacity}$$

### Determining Pump Head

Total pump head in feet is determined by adding together:

Height from bottom of sump to highest point of discharge, plus

Friction loss in discharge line, plus

Back-pressure, if any, from sewer line (usually not over 11')

### Duplex Pumps Recommended

Installing two complete pumps, with automatic alternation, in one basin permits the removal of one for servicing with continuing complete protection. In an emergency, the second pump will automatically cut in, increasing the capacity. By alternating the pumps every use cycle, both pumps are kept in operating condition and wear on the moving parts is equalized.

## Application Notes

## Mechanical Description

Dependable Type L pumps are especially suited for pumping surface water, seepage, foundation drainage, etc. from sumps. Horse-powers range from  $\frac{1}{4}$  through 5. Discharge sizes are 2, 3 or 4 inch. Exact Peerless Pump specifications and machined tolerances assure reliable performance and maximum service life.

Single units or double units for duplex installation, with or without basin, are available. Models include a float operated switch or the Peerless Pump Series P Sealtrade® floatless pump controller with control panel. Pump alternator switch and high water alarm may be specified.

### Range

To 100' head; To 275 gpm.

### Pump

Centrifugal type having a high grade cast iron casting, a free flow strainer and smooth finished volute and elbow, all contributing to high overall efficiency.

### Impeller

Cast bronze semi-open type in the LGL2 and enclosed type in the LB and LH series. Efficient design assures constant hydraulic performance throughout each impeller's range.

### Shaft

High tensile strength steel turned and ground entire length. Special straightening operations assure minimum vibration under full load operation.

### Bearings

Ball thrust type with grease fitting provides long bearing life. Bearing housing provides additional protection against entry of dirt and moisture. Intermediate and casing radial bearings are self lubricating bronze sleeve type on the LGL2 and LB2A and of the bronze sleeve grease lubricated type on the LH2A, LB3A and LB4A.

### Coupling

Flexible coupling between motor drive shaft and pump line shaft utilizes a vibration absorbing rubber insert. Same design as used on large heavy duty vertical sewage pumps.

### Hanger Pipe

Encloses rotating shaft, positions and maintains alignment of the intermediate bearings and transmits the weight of the pump casing to the floor plate.

### Discharge Pipe

Discharge connection sizes are 2, 3 or 4 inch pipe; see pages 5 and 6 for sizes and types by pump model.

### Floor Plate

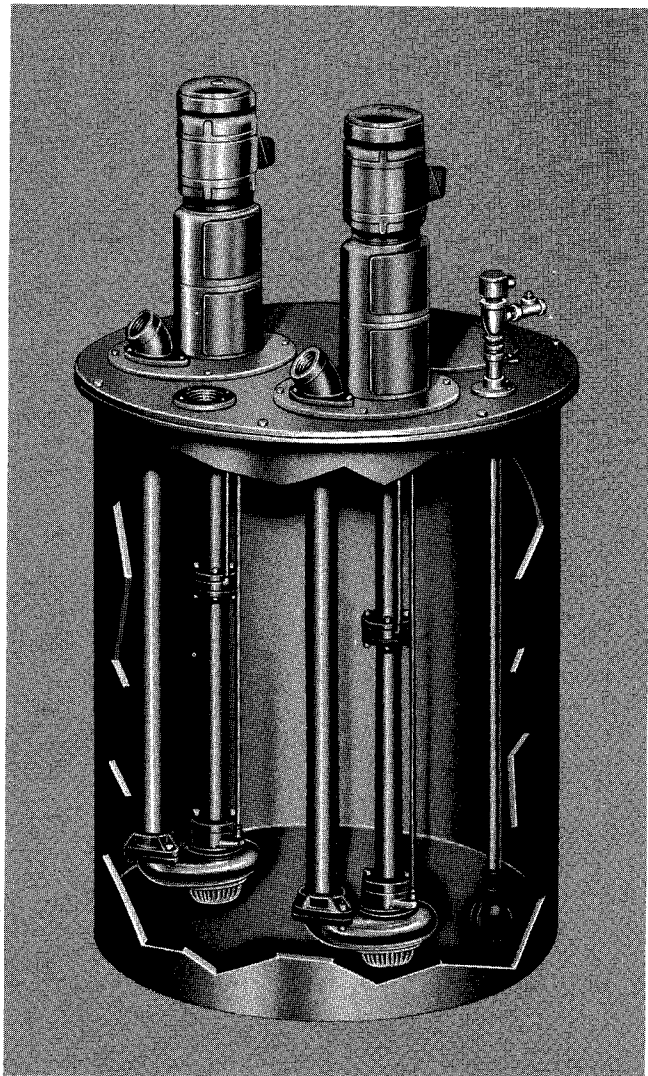
Heavy duty 20" diameter cast iron floor plate supports the entire pumping unit.

### Motor

Major brand name motors are furnished to provide a long trouble-free life expectancy. For special electrical characteristics consult your nearest Peerless Pump representative.

### Automatic Control

Models are equipped with either a float operated switch or with the Peerless Pump Series P Sealtrade® floatless pump control system.



Typical Duplex installation illustrating discharge piping and Peerless Series P Sealtrade.



**Peerless Pump Company**

P.O. Box 7026 • Indianapolis, IN 46207-7026  
Phone: (317) 925-9661 • Fax: (317) 924-7388